Alaska Energy Cost Reduction Program

Grantee: Alaska Power and Telephone Company

Project Name: AEA / Denali – Prince of Wales Switchgear Upgrades

Authority Contract Number **2195136**

Grant Project Completion Report

Background:

Prince of Wales Island is the third largest island in the United States lying west of Ketchikan, Alaska. The larger communities of Craig, Klawock, and Thorne Bay are electrically interconnected with primary electric power supplied by the Black Bear Lake Hydroelectric plant (BBL- 4.5 MW) and the recently completed South Fork Hydroelectric plant. The electrical transmission system has been expanded over the last 10 years to include Viking Lumber sawmill, Thorne Bay, Kasaan, Hollis and Hydaburg. Funding is also being sought to extend the electrical transmission line to Naukati and Coffman Cove becoming the Black Bear Lake Grid (grid).

In anticipation of continued expansion of the interconnection on Prince of Wales Island, Alaska Power and Telephone Company (AP&T) applied for funding to upgrade the antiquated electrical switchgear in Hydaburg, Thorne Bay, and Coffman Cove with automated switchgear that would allow for remote starting and switching of these power plants in the event the grid power was lost or local generation failed.

Activities:

AP&T was the general contractor on the project, securing the necessary permits, providing engineering design and constructing the project with their own work force and seasonal labor. Work began on the Hydaburg portion of the upgrade in the summer of 2004. The Hydaburg upgrade was completed in October of 2005.

Long lead time materials, switchgear, transformers were ordered in March 2006 and the Thorne Bay and Coffman Cove plants were completed in September of 2006.

Project Cost:

AEA/Denali Grant	$318,918
AEA Power Projects Loan Fund	$181,082
Alaska Power & Telephone	$1,277
Total Project Budget	$501,277
Labor Costs	$149,585
Direct Materials	$287,963
Other Materials	$31,558
Vehicle Costs	$32,171
Total Project Cost	$501,277

Project Outcomes:

Antiquated electrical switching units has been completed reducing labor costs and increasing reliability of providing power to the communities of Hydaburg, Coffman Cove, and Thorne Bay.

Problems Encountered:

Increased delivery times and material costs impacted the completion of this project. Re-construction of the road into Coffman Cove also increased labor costs due to road delays and an additional 8 miles of driving on a detour road.

Conclusions and Recommendations:

The replacement of these antiquated electrical switching units has increased the safety and reliability of providing power to the communities of Hydaburg, Coffman Cove, and Thorne Bay. This equipment also decreased the length of outages from an average of 45 minutes to 2 minutes when we lose power from the grid. Labor costs in Hydaburg, Thorne Bay, and Coffman Cove have been reduced by fifty percent or more as AP&T has been able to reduce staff in these communities.

The ability to monitor and switch generators via modem at all three plants was gained with the equipment upgrades. This reduces future labor costs and greatly enhances our ability to maintain steady and reliable power to these remote communities on Prince of Wales Island.